

FIRST QUARTER 2022 SITE MONITORING DATA

WERNING 7-2 (FAC)

COGCC SPILL TRACKING # 443973
COGCC REMEDIATION # 16540

Prepared for:



2115 117th Avenue
Greeley, CO 80631

Prepared by:



6855 W 119th Avenue
Broomfield, CO, 80020

TABLE 1
GROUNDWATER ELEVATION DATA
NOBLE ENERGY, INC. - WERNING 7-2 (FAC)



Monitoring Well ID	Date	Top of Casing Elevation (ft. AMSL)	Total Depth (ft. BTOC)	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)	Groundwater Elevation* (ft. AMSL)
BH01	04/30/21	4667.70	8.76	2.97	ND	ND	4662.70
BH01	07/01/21	4667.70	4.82	Well Obstructed - Unable to Gauge			
BH01R	08/10/21	4667.39	14.46	4.78	ND	ND	4660.41
BH01R	10/29/21	4667.39	13.07	3.67	ND	ND	4661.52
BH01R	03/31/22	4667.39	13.06	4.27	ND	ND	4660.92
BH02	04/30/21	4665.72	10.95	4.31	ND	ND	4661.69
BH02	07/01/21	4665.72	10.72	3.91	ND	ND	4662.09
BH02	10/29/21	4665.72	10.67	4.48	ND	ND	4661.52
BH02	03/31/22	4665.72	10.75	5.00	ND	ND	4661.00
BH03	04/30/21	4665.81	11.52	4.51	ND	ND	4661.51
BH03	07/01/21	4665.81	11.28	4.03	ND	ND	4661.99
BH03	10/29/21	4665.81	11.19	4.63	ND	ND	4661.39
BH03	03/31/22	4665.81	11.20	5.20	ND	ND	4660.82
BH04	04/30/21	4665.88	11.23	4.35	ND	ND	4661.77
BH04	07/01/21	4665.88	11.15	3.78	ND	ND	4662.34
BH04	10/29/21	4665.88	11.02	4.47	ND	ND	4661.65
BH04	03/31/22	4665.88	11.07	5.16	ND	ND	4660.96
BH05	04/30/21	4665.78	12.56	4.00	ND	ND	4662.18
BH05	07/01/21	4665.78	11.58	3.88	ND	ND	4662.30
BH05	10/29/21	4665.78	11.33	4.50	ND	ND	4661.68
BH05	03/31/22	4665.78	11.32	5.15	ND	ND	4661.03
BH06	08/10/21	4666.94	13.54	4.91	ND	ND	4662.40
BH06	10/29/21	4666.94	13.58	5.51	ND	ND	4661.80
BH06	03/31/22	4666.94	13.42	6.15	ND	ND	4661.16
BH09	11/15/21	4667.33	13.97	5.76	ND	ND	4661.77
BH09	03/31/22	4667.33	13.65	6.14	ND	ND	4661.39
BH10	11/15/21	4667.78	14.08	6.25	ND	ND	4661.87
BH10	03/31/22	4667.78	14.03	6.69	ND	ND	4661.43
BH11	11/15/21	4667.03	14.11	5.45	ND	ND	4661.80
BH11	03/31/22	4667.03	14.01	6.02	ND	ND	4661.23

Notes:

ft. = Feet

AMSL = Above mean sea level

BTOC = Below top of casing

LNAPL = Light non-aqueous phase liquid

ND = No LNAPL detected

* Groundwater elevation was corrected for product thickness (when present) using the following calculation:

Groundwater elevation = (TOC Elevation - Measured Depth to Water)+(LNAPL Thickness in Well x LNAPL Relative Density)

LNAPL relative density was estimated to be approximately 0.75

TABLE 2
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - WERNING 7-2 (FAC)



Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4-TMB (µg/L)	1,3,5-TMB (µg/L)	TDS (mg/L)	Chloride Ion (mg/L)	Sulfate Ion (mg/L)
COGCC Standard		5	560	700	1,400	140	67	67	<1.25 x Background	250 or <1.25 x Background	250 or <1.25 x Background
BH01 ²	04/30/21	<1.0	<1.0	<1.0	<2.0	3.8	130	<1.0	1,250	0.100	276
BH01 ^{2,3}	07/01/21	Not sampled due to obstruction in well									
BH01 ⁴	07/01/21										
BH01R	08/10/21	<1.0	<1.0	<1.0	<2.0	<1.0	2.2	3.1	NA	NA	NA
BH01R	10/29/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	745	151	336
BH01R	03/31/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,050	185	270
BH02 ²	04/30/21	<1.0	<1.0	<1.0	<2.0	<1.0	5.4	1.5	1,330	135	286
BH02 ^{2,3}	07/01/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	771	141	4,180
BH02 ⁴	07/01/21	NA	NA	NA	NA	NA	NA	NA	916	166	271
BH02	10/29/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	759	151	289
BH02	03/31/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,050	189	304
BH03 ²	04/30/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,320	63.6	37,300
BH03 ^{2,3}	07/01/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	739	114	3,370
BH03 ⁴	07/01/21	NA	NA	NA	NA	NA	NA	NA	1,130	154	317
BH03	10/29/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	771	151	335
BH03	03/31/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,010	171	240
BH04 ²	04/30/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,320	115	33,200
BH04 ^{2,3}	07/01/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	742	132	969
BH04 ⁴	07/01/21	NA	NA	NA	NA	NA	NA	NA	968	154	324
BH04 ⁴	10/29/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	762	154	335
BH04 ⁴	03/31/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,030	187	266
BH05 ²	04/30/21	<1.0	<1.0	<1.0	<2.0	<1.0	14	9.7	1,270	147	1,080
BH05 ^{2,3}	07/01/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	759	122	226
BH05 ⁴	07/01/21	NA	NA	NA	NA	NA	NA	NA	914	152	140
BH05	10/29/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	763	148	174
BH05	03/31/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,040	184	244
BH06	08/10/21	24	<1.0	380	4,700	32	1,300	51	NA	NA	NA
BH06	10/29/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	750	164	307
BH06	03/31/22	17	<1.0	5.0	33	<1.0	13	6.5	1,060	176	290
BH09	11/15/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	778	186	288
BH09	03/31/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,080	192	284
BH10	11/15/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	775	195	316
BH10 ⁽⁵⁾	03/31/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,090	184	256
BH11	11/15/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	775	173	328
BH11	03/31/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,060	194	274

Notes:

⁽¹⁾ Groundwater standards referenced from 2 CCR 404-1, Table 915-1 (January 15, 2021)

⁽²⁾ Inorganic groundwater analytical data invalidated due to anomalous results, identified as a result of laboratory error.

⁽³⁾ Side by side sample collected 07/01/21 due to previous anomalous sulfate ion results, Summit Scientific.

⁽⁴⁾ Side by side sample collected 07/01/21 due to previous anomalous sulfate ion results, Origins Laboratory.

⁽⁵⁾ Monitoring well used to calculate background inorganic concentration standards

Definitions:

< = Analytical result is less than the indicated laboratory reporting limit

COGCC = Colorado Oil and Gas Conservation Commission

µg/L = Micrograms per liter

mg/L = Milligrams per liter

NA = Not analyzed

1,2,4 - TMB = 1,2,4 Trimethylbenzene

1,3,5 - TMB = 1,3,5 Trimethylbenzene

TDS = Total Dissolved Solids

Highlighted results are equal to or exceed the COGCC Table 910-1 standard

Bold results exceed the COGCC Table 915-1 standard for groundwater inorganic parameters, site-specific background assessment is on-going for groundwater inorganic constituents.

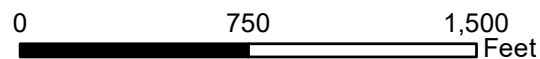
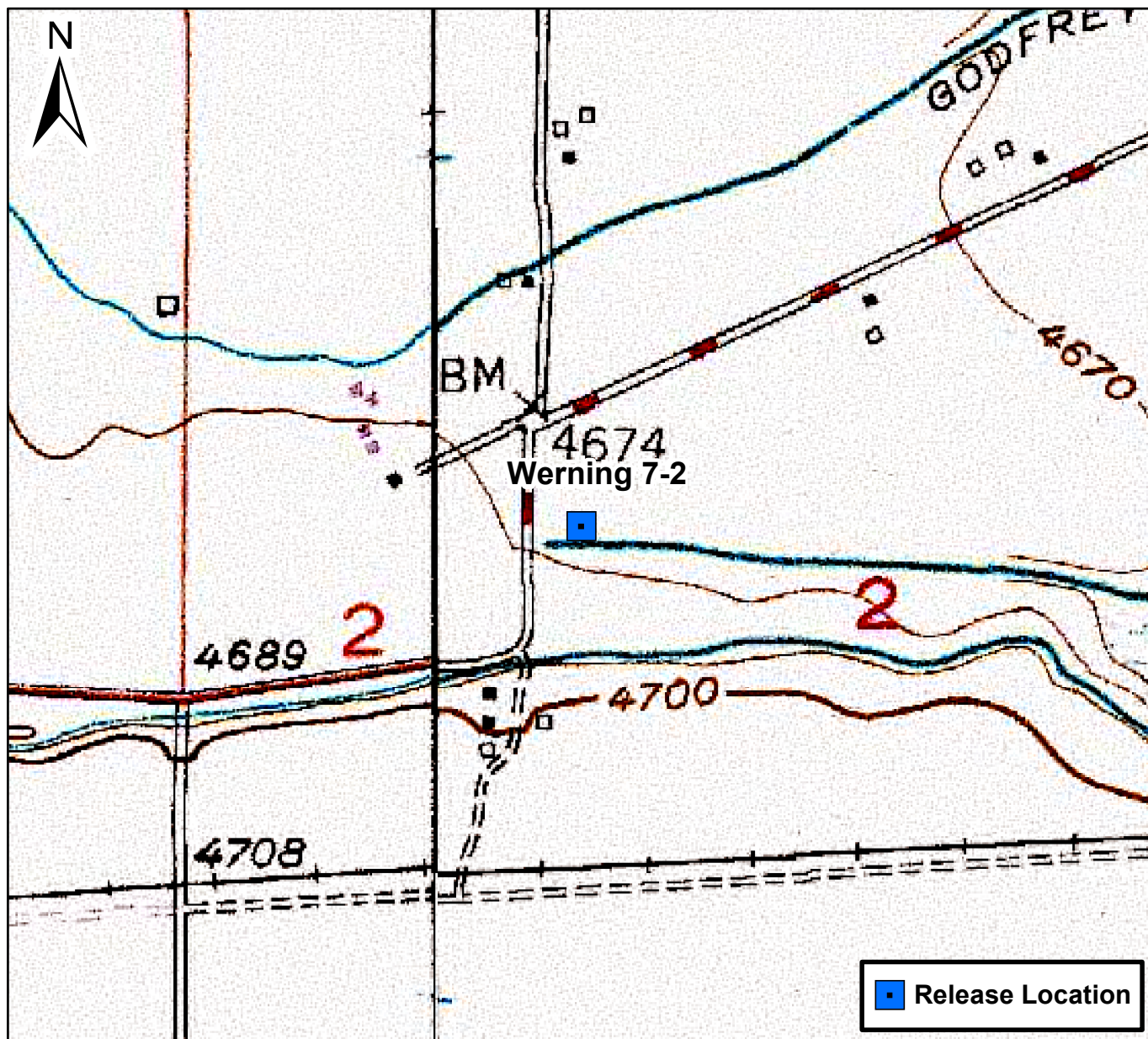


Figure 1

Site Location Map
Werning 7-2
SENW S2 T4N R66W
Weld County, Colorado





DATE:	04/20/2022
DESIGNED BY:	JW
DRAWN BY:	LR

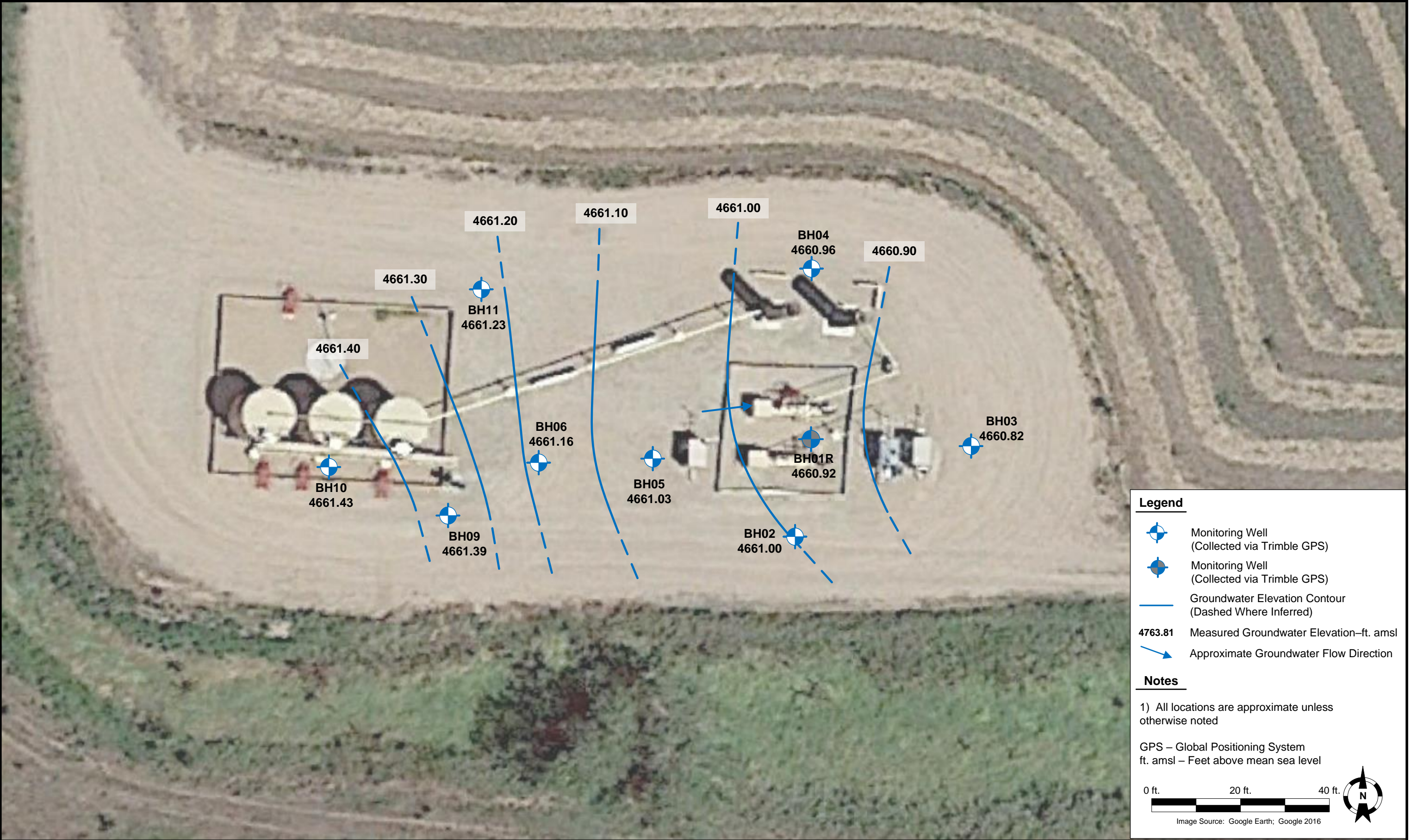
**TASMAN**


Tasman Geosciences, Inc.
6855 W 119th Ave.
Broomfield, CO 80020

Noble Energy, Inc. – DJ Basin
Werning 7-2
SENW, Section 2, Township 4 North, Range 66 West
Weld County, Colorado

Site Overview
Map

FIGURE
2



DATE: 04/20/2022	 TASMAN Tasman Geosciences, Inc. 6855 W 119 th Ave. Broomfield, CO 80020	Noble Energy, Inc. – DJ Basin Werning 7-2 SENW, Section 2, Township 4 North, Range 66 West Weld County, Colorado	Groundwater Potentiometric Surface Contour Map (03/31/2022)	FIGURE 3
DESIGNED BY: JW				
DRAWN BY: LR				

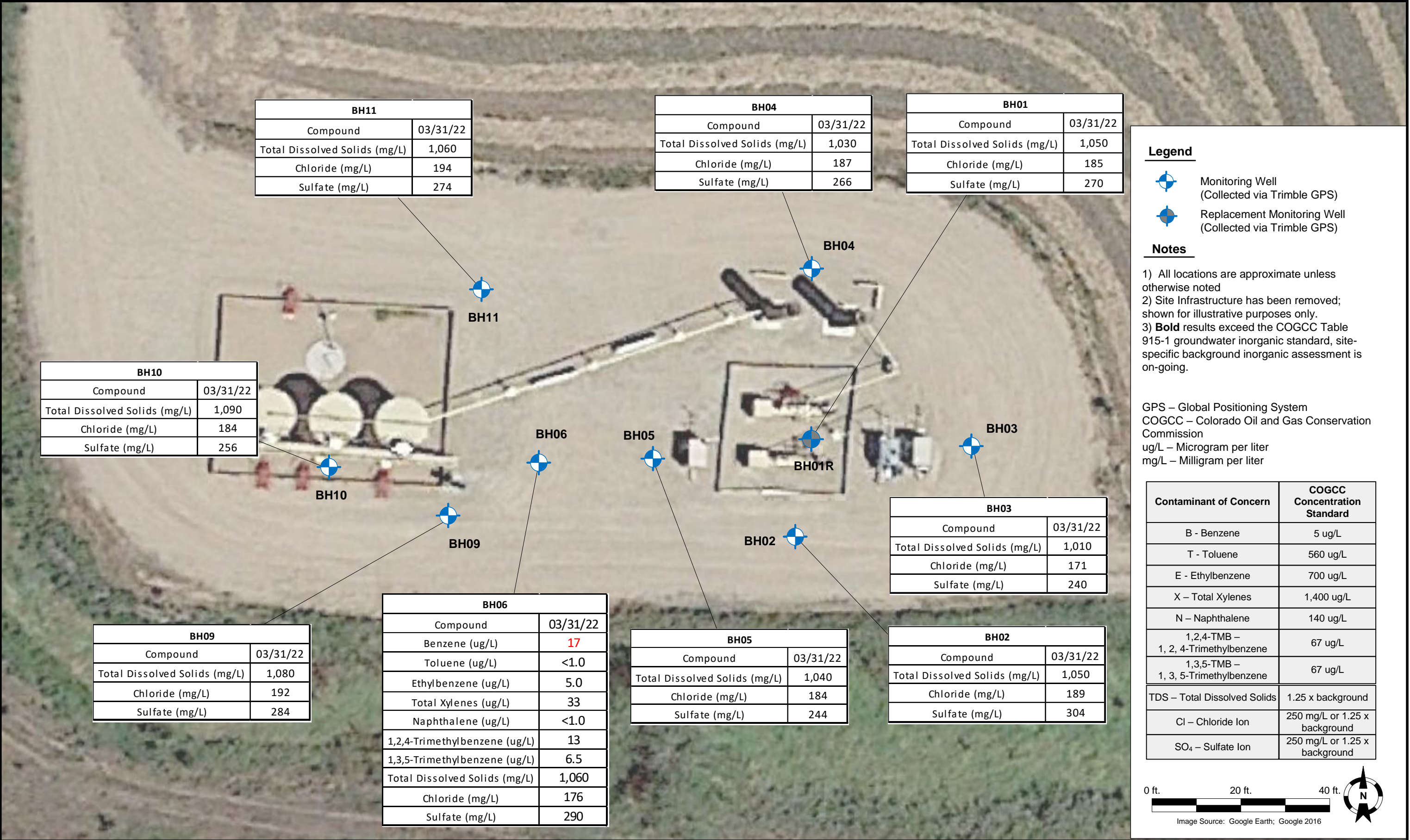
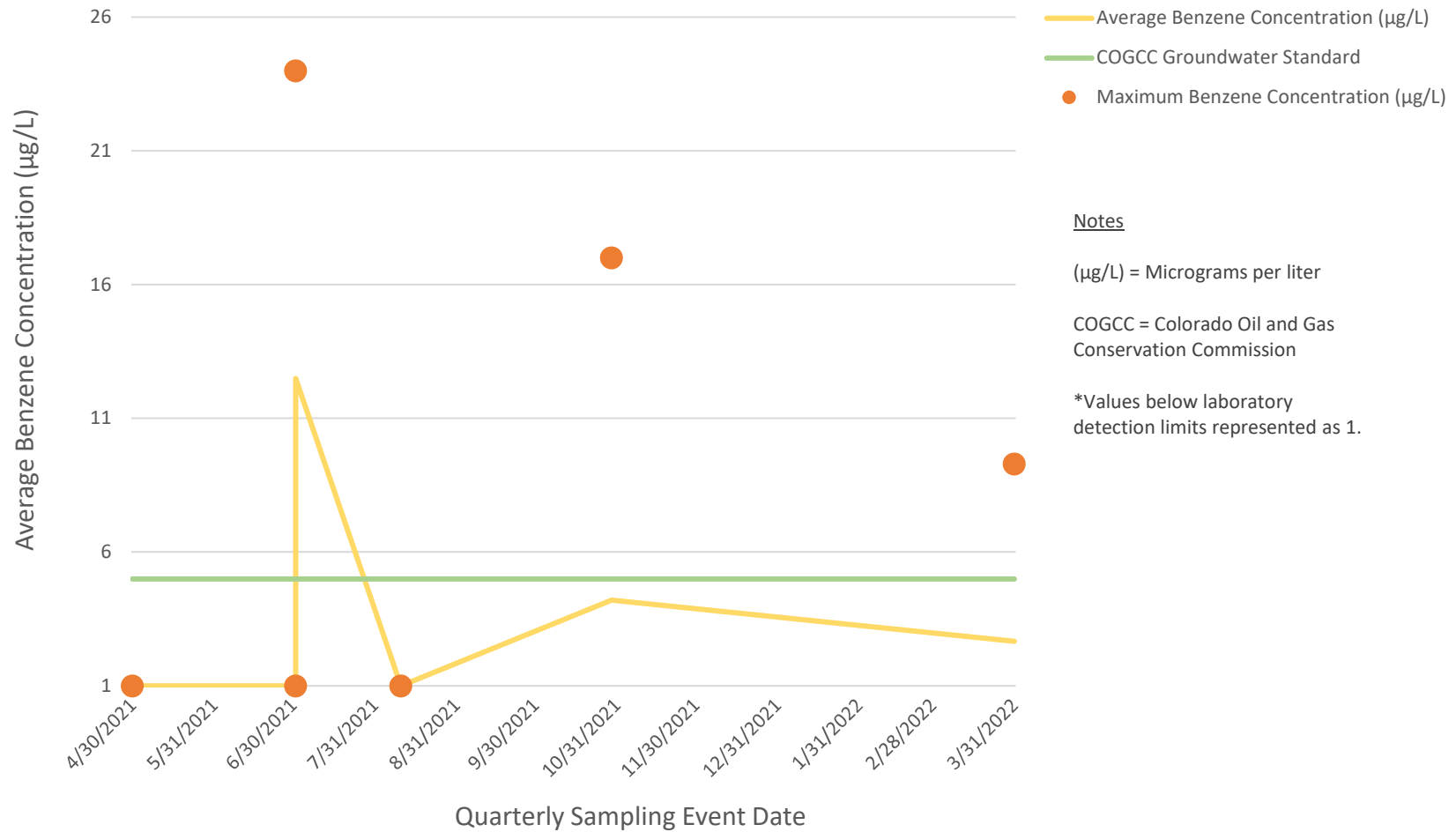


Figure 5
Werning 7-2 (FAC)
Average Quarterly Benzene Concentrations



Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

April 06, 2022

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Werning 7-2

Work Order #2203562

Enclosed are the results of analyses for samples received by Summit Scientific on 03/31/22 17:07. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Muri Premier", is displayed on a light purple rectangular background.

Muri Premier For Paul Shrewsbury
President



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Werning 7-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/06/22 14:40

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01R	2203562-01	Water	03/31/22 10:30	03/31/22 17:07
BH02	2203562-02	Water	03/31/22 10:36	03/31/22 17:07
BH03	2203562-03	Water	03/31/22 10:44	03/31/22 17:07
BH04	2203562-04	Water	03/31/22 10:52	03/31/22 17:07
BH05	2203562-05	Water	03/31/22 11:00	03/31/22 17:07
BH06	2203562-06	Water	03/31/22 11:08	03/31/22 17:07
BH09	2203562-07	Water	03/31/22 11:17	03/31/22 17:07
BH10	2203562-08	Water	03/31/22 11:26	03/31/22 17:07
BH11	2203562-09	Water	03/31/22 11:34	03/31/22 17:07

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

S₂

2203562

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Page 1 of 1

Client: Noble / Tasman
Address: 6855 W 119th Ave
City/State/Zip: Broomfield CO
Phone: 303-487-1228
Sampler Name: Aaron O'Hillan

Project Manager: Jack Whritenour
E-Mail: j.whritenour@tasman-geo.com

Project Name: Wening 7-2
Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEX	Naphthalene	1,2,4 TMB	1,3,5 TMB	TDS	Chloride	Sulphate	
1	BH01R	3/31/22	1030	4	3		1		X				X	X	X	X	X	X	X	
2	BH02		1036																	
3	BH03		1044																	
4	BH04		1052																	
5	BH05		1100																	
6	BH06		1108																	
7	BH09		1117																	
8	BH10		1126																	
9	BH11		1134																	
10																				

Relinquished by: <u>Aaron O'Hillan</u>	Date/Time: <u>3/31/22 1405</u>	Received by: <u>Tasman Lockbox</u>	Date/Time: <u>3/31/22 1405</u>	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/>	Notes:
Relinquished by: <u>Tasman Lockbox</u>	Date/Time: <u>3/31/22 1707</u>	Received by: <u>[Signature]</u>	Date/Time: <u>3/31/22 1707</u>	Sample Integrity: Temperature Upon Receipt: <u>0.9</u>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

S₂

2203562

Sample Receipt Checklist

S2 Work Order#

Client: Noble GasmanClient Project ID: Werning 7-2

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other

Airbill #:

Matrix (Check all that apply)

Air

Soil/Solid

Water

Other

Temp (°C)

0.1

Thermometer #

1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6 °C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	-			on Ice
Were all samples received intact ⁽¹⁾ ?	-			
Was adequate sample volume provided ⁽¹⁾ ?	-			
If custody seals are present, are they intact ⁽¹⁾ ?	-			
Are samples due within 48 hours present?		-		
Are water samples with short hold times present? NOTE The short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen			-	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	-			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	-			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	-			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	-			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.		-		
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	-			HCl
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			-	
If dissolved metals are requested, were samples field filtered?			-	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

Custodian Printed Name

3.31.22
Date/Time



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Werning 7-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/06/22 14:40

BH01R
2203562-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/31/22 10:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	BFD0015	04/01/22	04/02/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/31/22 10:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **03/31/22 10:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chloride	185	12.0	mg/L	200	BFD0055	04/01/22	04/04/22	EPA 300.0	
Sulfate	270	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **03/31/22 10:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Total Dissolved Solids	1050	10.0	mg/L	1	BFD0024	04/01/22	04/01/22	SM2540C	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Werning 7-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/06/22 14:40

BH02
2203562-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/31/22 10:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFD0015	04/01/22	04/02/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/31/22 10:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **03/31/22 10:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	189	12.0	mg/L	200	BFD0055	04/01/22	04/04/22	EPA 300.0	
Sulfate	304	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **03/31/22 10:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	1050	10.0	mg/L	1	BFD0024	04/01/22	04/01/22	SM2540C	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Werning 7-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/06/22 14:40

BH03
2203562-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/31/22 10:44**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFD0015	04/01/22	04/02/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/31/22 10:44**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **03/31/22 10:44**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	171	12.0	mg/L	200	BFD0055	04/01/22	04/04/22	EPA 300.0	
Sulfate	240	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **03/31/22 10:44**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	1010	10.0	mg/L	1	BFD0024	04/01/22	04/01/22	SM2540C	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Werning 7-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/06/22 14:40

BH04
2203562-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/31/22 10:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFD0015	04/01/22	04/02/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/31/22 10:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.5 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **03/31/22 10:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	187	12.0	mg/L	200	BFD0055	04/01/22	04/04/22	EPA 300.0	
Sulfate	266	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **03/31/22 10:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	1030	10.0	mg/L	1	BFD0024	04/01/22	04/01/22	SM2540C	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Werning 7-2

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

04/06/22 14:40

BH05
2203562-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/31/22 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFD0015	04/01/22	04/02/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/31/22 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		109 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.5 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **03/31/22 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	184	12.0	mg/L	200	BFD0055	04/01/22	04/04/22	EPA 300.0	
Sulfate	244	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **03/31/22 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	1040	10.0	mg/L	1	BFD0024	04/01/22	04/01/22	SM2540C	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Werning 7-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/06/22 14:40

BH06
2203562-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/31/22 11:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	17	1.0	ug/l	1	BFD0015	04/01/22	04/02/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	5.0	1.0	"	"	"	"	"	"	
Xylenes (total)	33	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	13	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	6.5	1.0	"	"	"	"	"	"	

Date Sampled: **03/31/22 11:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		121 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		110 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		116 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **03/31/22 11:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	176	12.0	mg/L	200	BFD0055	04/01/22	04/04/22	EPA 300.0	
Sulfate	290	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **03/31/22 11:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	1060	10.0	mg/L	1	BFD0024	04/01/22	04/01/22	SM2540C	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Werning 7-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/06/22 14:40

BH09
2203562-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/31/22 11:17**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFD0015	04/01/22	04/02/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/31/22 11:17**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **03/31/22 11:17**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	192	12.0	mg/L	200	BFD0055	04/01/22	04/04/22	EPA 300.0	
Sulfate	284	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **03/31/22 11:17**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	1080	10.0	mg/L	1	BFD0024	04/01/22	04/01/22	SM2540C	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Werning 7-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/06/22 14:40

BH10
2203562-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/31/22 11:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFD0015	04/01/22	04/02/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/31/22 11:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		116 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.2 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **03/31/22 11:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	184	12.0	mg/L	200	BFD0055	04/01/22	04/04/22	EPA 300.0	
Sulfate	256	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **03/31/22 11:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	1090	10.0	mg/L	1	BFD0024	04/01/22	04/01/22	SM2540C	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Werning 7-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/06/22 14:40

BH11
2203562-09 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/31/22 11:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFD0015	04/01/22	04/02/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/31/22 11:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.4 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **03/31/22 11:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	194	12.0	mg/L	200	BFD0055	04/01/22	04/04/22	EPA 300.0	
Sulfate	274	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **03/31/22 11:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	1060	10.0	mg/L	1	BFD0024	04/01/22	04/01/22	SM2540C	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Werning 7-2

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

04/06/22 14:40

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0015 - EPA 5030 Water MS

Blank (BFD0015-BLK1)

Prepared: 04/01/22 Analyzed: 04/02/22

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	14.9		"	13.3		111	23-173			
Surrogate: Toluene-d8	14.0		"	13.3		105	20-170			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.0	21-167			

LCS (BFD0015-BS1)

Prepared: 04/01/22 Analyzed: 04/02/22

Benzene	38.8	1.0	ug/l	41.7		93.0	51-132			
Toluene	43.9	1.0	"	41.7		105	51-138			
Ethylbenzene	41.5	1.0	"	41.7		99.5	58-146			
m,p-Xylene	81.5	2.0	"	83.3		97.8	57-144			
o-Xylene	42.2	1.0	"	41.7		101	53-146			
Naphthalene	35.1	1.0	"	41.7		84.3	70-130			
1,2,4-Trimethylbenzene	45.9	1.0	"	41.7		110	70-130			
1,3,5-Trimethylbenzene	46.7	1.0	"	41.7		112	70-130			
Surrogate: 1,2-Dichloroethane-d4	16.7		"	13.3		125	23-173			
Surrogate: Toluene-d8	14.4		"	13.3		108	20-170			
Surrogate: 4-Bromofluorobenzene	13.6		"	13.3		102	21-167			

Matrix Spike (BFD0015-MS1)

Source: 2203471-01

Prepared: 04/01/22 Analyzed: 04/02/22

Benzene	38.4	1.0	ug/l	41.7	ND	92.3	34-141			
Toluene	44.1	1.0	"	41.7	ND	106	27-151			
Ethylbenzene	41.8	1.0	"	41.7	ND	100	29-160			
m,p-Xylene	83.5	2.0	"	83.3	ND	100	20-166			
o-Xylene	42.6	1.0	"	41.7	ND	102	33-159			
Naphthalene	39.7	1.0	"	41.7	ND	95.3	70-130			
1,2,4-Trimethylbenzene	45.6	1.0	"	41.7	ND	110	70-130			
1,3,5-Trimethylbenzene	46.9	1.0	"	41.7	ND	113	70-130			
Surrogate: 1,2-Dichloroethane-d4	15.4		"	13.3		115	23-173			
Surrogate: Toluene-d8	14.4		"	13.3		108	20-170			
Surrogate: 4-Bromofluorobenzene	13.8		"	13.3		103	21-167			

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Werning 7-2

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

04/06/22 14:40

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0015 - EPA 5030 Water MS

Matrix Spike Dup (BFD0015-MSD1)	Source: 2203471-01			Prepared: 04/01/22 Analyzed: 04/02/22						
Benzene	38.5	1.0	ug/l	41.7	ND	92.5	34-141	0.208	30	
Toluene	42.1	1.0	"	41.7	ND	101	27-151	4.67	30	
Ethylbenzene	41.0	1.0	"	41.7	ND	98.4	29-160	1.93	30	
m,p-Xylene	82.7	2.0	"	83.3	ND	99.2	20-166	1.01	30	
o-Xylene	42.0	1.0	"	41.7	ND	101	33-159	1.42	30	
Naphthalene	41.5	1.0	"	41.7	ND	99.5	70-130	4.39	30	
1,2,4-Trimethylbenzene	46.0	1.0	"	41.7	ND	110	70-130	0.677	30	
1,3,5-Trimethylbenzene	46.7	1.0	"	41.7	ND	112	70-130	0.406	30	
Surrogate: 1,2-Dichloroethane-d4	16.6		"	13.3		124	23-173			
Surrogate: Toluene-d8	13.6		"	13.3		102	20-170			
Surrogate: 4-Bromofluorobenzene	13.8		"	13.3		104	21-167			

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Werning 7-2

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

04/06/22 14:40

Anions by EPA Method 300.0 - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0055 - General Preparation

Blank (BFD0055-BLK1)

Prepared: 04/01/22 Analyzed: 04/02/22

Chloride	ND	0.0600	mg/L
Sulfate	ND	0.300	"

LCS (BFD0055-BS1)

Prepared: 04/01/22 Analyzed: 04/02/22

Chloride	3.02	0.0600	mg/L	3.00	101	90-110
Sulfate	14.7	0.300	"	15.0	97.8	90-110

Duplicate (BFD0055-DUP1)

Source: 2204015-01

Prepared: 04/01/22 Analyzed: 04/02/22

Chloride	8.88	0.0600	mg/L	8.49	4.49	20
Sulfate	1020	60.0	"	1020	0.0197	20

Matrix Spike (BFD0055-MS1)

Source: 2204015-01

Prepared: 04/01/22 Analyzed: 04/02/22

Chloride	6.04	0.0600	mg/L	3.00	8.49	NR	80-120	QM-05
Sulfate	ND	0.300	"	15.0	1020	NR	80-120	QM-02

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Werning 7-2

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

04/06/22 14:40

Total Dissolved Solids by SM2540C - Quality Control

Summit Scientific

Analyte	Result	Reporting			Spike	Source	%REC		RPD		
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes	

Batch BFD0024 - General Preparation

Blank (BFD0024-BLK1)

Prepared & Analyzed: 04/01/22

Total Dissolved Solids ND 10.0 mg/L

Duplicate (BFD0024-DUP1)

Source: 2203493-01

Prepared & Analyzed: 04/01/22

Total Dissolved Solids 1150 10.0 mg/L 1140 0.612 20

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Werning 7-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
04/06/22 14:40

Notes and Definitions

QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
QM-02	The RPD and/or percent recovery for this QC sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference